

4. Evaluation

a. Structural and Geotechnical

- (1) General
- (2) Embankment and/or Foundation Condition
- (3) Stability—Briefly discuss pertinent information such as design, construction and operating records. Assess stability under maximum loading on basis of the record data, together with observations of field inspection and results of any additional, brief calculations performed by inspectors. If additional, detailed stability analyses are considered necessary, recommend that the owner engage a qualified engineer or firm to provide the analysis.

b. Hydrologic and Hydraulic

- (1) Spillway Adequacy—Briefly describe pertinent record information such as hydrologic and hydraulic design data, flood of record, and previous analyses. Describe any hydraulic and hydrologic analyses made for this inspection. Present conclusion with respect to adequacy of spillway to pass the recommended spillway design flood without overtopping dam. If overtopping would occur, and if available from the type of analysis used, give maximum depth over top of dam and duration of overtopping, assuming the dam does not fail. Also indicate the largest flood, as a percentage of the probable maximum flood which can be passed without overtopping.

- (2) Effects of overtopping—If dam is overtopped by the recommended spillway design flood, provide assessment as to whether or not dam would likely fail, and if, in case of failure, the hazard to loss of life downstream of the dam would be substantially increased over that which would exist without failure. If information upon which to base a reasonable assessment is insufficient, so state and describe the needed data, and recommend that the necessary studies be performed by engineers engaged by the owner.

c. Operation and Maintenance

- Assess operating equipment and procedures, emergency power for gate operation, and Emergency Action Plan. Assess quality of maintenance as it pertains to dam safety.

5. Conclusions

- Provide conclusions on condition of dam and list all deficiencies. If dam is considered unsafe, so state and give reason.

6. Recommendations

- List all recommended actions, including additional studies, installation of new surveillance procedures and devices, development of Emergency Action Plans, and remedial work. Recommend that a qualified engineering firm be retained to accomplish any recommended additional investigations and studies and also to design and supervise remedial works.

Appendixes

a. Inspection Checklist (if available)

b. Other Illustrations as follows:

- (1) Include a map showing location of the dam. Usually a portion of a USGS quadrangle sheet can be used which will show the topography of the area, location of the dam, extent of the lake and drainage basin, and perhaps indicate the downstream development.
- (2) If available, include a plan and section of the dam.
- (3) General photographs of the dam and downstream channel should be included.
- (4) Color photographs of deficiencies should be included. These should be held to the minimum required to illustrate the deficiencies.
- (5) Available engineering data including Hydrologic/Hydraulic calculation and physical test results that might be available.

APPENDIX F TO § 222.6

Instructions for Unsafe Dam Data Sheet
(RCS-DAEN-CWE-17 and OMB No. 49-R0421)

The indicated information shall be provided in the format shown on Pg F-3 for each dam assessed to be unsafe during the reporting period. A separate data sheet should be provided for each unsafe dam. The information supplied should conform to the following.

- a. *Name*—Name of dam.
- b. *Id. No.*—Dam inventory identity number.
- c. *Location*—List state county, river or stream and nearest D/S city or town where the dam is located.
- d. *Height*—Maximum hydraulic height of dam.
- e. *Maximum Impoundment Capacity*—List the capacity of the reservoir at maximum attainable water surface elevation including any surcharge loading.
- f. *Type*—Type of dam, i.e., earth, rockfill, gravity, combination earth-gravity, etc.
- g. *Owner*—Owner of dam.
- h. *Date Governor Notified of Unsafe Condition*—The date and method of notification, such as, by telegram, letter, report, etc.
- i. *Condition of Dam Resulting in Unsafe Assessment*—Brief description of the deficiencies discovered which resulted in the unsafe assessment.
- j. *Description of Danger Involved*—Downstream (D/S) hazard potential category and a brief description of the danger involved.
- k. *Recommendations Given to Governor*—Brief description of the actions recommended to Governor at time of notification of unsafe condition to eliminate or reduce the danger.
- l. *Urgency Category*—State whether the unsafe condition of the dam is an emergency or non-emergency situation. An emergency situation should be considered to exist if the failure of the dam is judged to be imminent

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and requires immediate action to eliminate or reduce the danger.

m. *Emergency Actions Taken*—In case of an emergency situation, list the actions taken. For non-emergency situation, put NA for “not applicable.”

n. *Remedial Action Taken*—For non-emergency situations list remedial actions taken.

o. *Remarks*—For other pertinent information.

Format for Unsafe Dam Data Sheet (RCS-DAEN-CWE-17 and OMB No. 49-R0421)

National Program of Inspection of Non-Federal Dams—Unsafe Dam Data Sheet

a. *Name:*

b. *Type:*

c. *Height:*

d. *Id. No.*

e. *Location:*

State: *County:*

Nearest D/S City, Town or Village:

River or Stream:

f. *Owner:*

g. *Date Governor Notified of Unsafe Condition:*

h. *Condition of Dam Resulting in Unsafe Assessment:*

i. *Description of Danger Involved:*

j. *Recommendations Given to Governor:*

k. *Urgency Category:*

l. *Emergency Actions Taken:*

m. *Remarks:*

APPENDIX G TO § 222.6

National Program for Inspection of Non-Federal Dams—Monthly Progress Report (RCS-DAEN-CWE-19)

I. *Instructions for Monthly Progress Report.* The indicated information shall be provided in the format shown on page G-2.

1. *Division Reporting:*

2. *Date:*

3. *Information Required for Each State Regarding Total Number of Inspections Performed (AE Inspections included) (Cumulative):*

3.1. *Number of Inspections Initiated by on-site inspection or the review of engineering data from project records.*¹

3.2. *Number of Inspections Completed (The number of inspection reports which have been submitted to the District Engineer for review and approval).*

3.3. *Number of Dams Reported to the Governor as Unsafe.*²

¹Each of the initiated inspections reported should be planned for completion within a reasonable period of time (30 days.)

²An unsafe dam is defined as a dam with deficiencies of such a nature that if not corrected could result in the failure of the dam

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3.4. *Number of Approved Inspection Reports Submitted to the Governor.*

4. *Information Required for Each State Regarding Inspections Performed Under AE Contracts (Cumulative):*

4.1. *Number of Dams Contracted for Inspection by AE's with State or Corps.*

4.2. *Number of Inspections Initiated by AE's by on-site inspection or the review of engineering data from project records.*¹

4.3. *Number of Inspections Completed by AE's (The number of inspection reports which have been submitted to the District Engineer for review and approval).*

4.4. *Number of Approved Inspection Reports Prepared by AE's Submitted to the Governor.*

II. *Formation for Monthly Progress Report.*

National Program for Inspection of Non-Federal Dams—Monthly Progress Report

1. *Division Reporting:*

2. *Date:*

3. *Information Required for Each State Regarding Total Number of Inspections Performed (Cumulative):*

State	Inspection Initiated (3.1)	Inspection Completed (3.2)	Unsafe Dams Reported (3.3)	Approved Reports (3.4)
Total.				

4. *Information Required for Each State Regarding Inspections Performed Under A/E Contracts (Cumulative):*

State	Dams Under A/E Contract (4.1)	A/E Inspections Initiated (4.2)	A/E Inspections Completed (4.3)	A/E Reports Approved (4.4)
Totals.				

APPENDIX H TO § 222.6

Suggested Scope of Work Contract for Architect-Engineer Services for Safety Inspection of Dams Within the State of

1. *General Description of Scope of Work.* The services to be rendered by the Architect-Engineer (AE) under the proposed contract

with subsequent loss of lives or substantial property damage.

¹See footnote on previous page.